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NON-SHRINK CEMENTITIOUS GROUT

DESCRIPTION

dura.®grout is a ready for use (merely add water) Portland cement-based grouting compound. It contains graded siliceous aggregate and chemical reagents which prevent shrinkage during curing.

USES

Consistency range at flowable, fluid or ram to suit application.

- **Bedding:** Column base plates, machinery base plates, bearing plates, crane rails.
- **Grouting:** Anchor bolts, cables, starter bars, top steel.
- **Repairing:** Cavities in concrete.

ADVANTAGES

- Quickly develops placeable consistency.
- Remains cohesive and does not segregate.
- Does not shrink.

DESIGN CRITERIA

A minimum clearance of 50 mm is required between bed and base. For smaller areas where the flow will not be restricted, a limited minimum thickness of 25 mm is recommended. When grouting anchor bolts, three times the bolt diameter is necessary. Smaller clearances should be grouted with one of the **epidermix** range of epoxy compounds.

SURFACE PREPARATION

Provision for the escape of entrapped air must always be made. Contact surfaces must be clean, sound, free from dust and shutter release oils. Concrete surfaces must be thoroughly pre-wetted but excess surface water (free water) must be removed prior to placing the grout. Surface temperatures should not be less than 5 °C. Always ensure that the shutters are watertight and sealed to prevent suction of water from the product. Ensure that the grout delivery head is of adequate height in order to accommodate the distance the grout must flow. Always pour from one side thus ensuring that the grout fills the void without entrapping air.

PHYSICAL PROPERTIES

Bulk density (mix)	2 kg/L
Density (powder)	2.93 kg/L
Colour	Grey
Workability time @ 25 °C	30 minutes
Physiological effect	As cement

BONDING/PRIMING

No primer required but in certain instances where structural bonding is required **abe® epidermix 344** should be used.

MIXING

All water contents apply to 25 kg pockets of **dura.®grout**. Water quantities must be adjusted to match size of mix. Mixes must

always use complete pockets, but more than one pocket may be used. Mixing of grout may be carried out in a pan mixer, drum mixer or by using a slow speed electric drill fitted with a suitable paddle. Using the standard 25 kg pocket of grout, add 3.5 L of clean water to the mixing vessel. While stirring continuously, add the dry powder until the mixture is free from lumps. Then add further water (500 ml to 1 L), continue mixing until a smooth, creamy consistency is obtained. Total mixing time should be approximately three minutes. **dura.®grout** used as a ram consistency – see mix design under “typical physical properties”.

EXTENDING dura.®grout

The minimum depth of grout to qualify for extending with 13 – 16 mm clean stone is 100 mm. The estimated water for a fluid (20 – 30 seconds) consistency, or less, is added to the mixer first followed by the dry grout.

After mixing for 2 – 3 minutes, 12 L of 13 – 16 mm clean stone should be added. After extending the grout, a lessening of flow of the mixed grout will be noted. Under no condition may any additional water be added to this mix as it would harm the quality of the matrix and the product will possibly bleed, shrink, and not perform to our satisfaction.

COVERAGE

One bag of **dura.®grout** will yield approximately 0.0125 m³ (12.5 L) of grout (4.5 L water demand). Yield as per extending above 0.023 m³ (23 L) of grout using 4.5 L water demand (LBD of stone of 1.2).

APPLICATION

Mixed grout should be poured into the cavity at one point only to avoid entrapping air. For best results, mixed grout should be poured within 10 minutes of mixing and definitely within 30 minutes. If grout is not placed immediately after mixing, keep the material agitated. Grouting mixture more than 30 minutes old must be discarded. **dura.®grout** can be compacted by gentle rodding or punning. It may also be applied by means of standard low pressure grouting pumps. Do not re-temper the grout should the consistency drop due to time lapse.

CLEANING

dura.®grout should be removed from tools and mixing equipment immediately after use and before material has set with clean water. Cured material can be removed mechanically, or with an inhibited acid etch.

PROTECTION ON COMPLETION

Grout surfaces should be protected from wind or high temperature, which can cause rapid drying. Cover the surface with damp sacks. Do not allow the sacks to dry out; alternatively apply **CHRYSO®Cure R** or **CHRYSO®Cure WB** curing compound.

TEMPERATURE AND RELATIVE HUMIDITY

Do not apply if surface temperature is below 5 °C.

MODEL SPECIFICATION

General-purpose, non-shrink cementitious grout for precision grouting.

The grout will be **dura.®grout**, a pre-packed, one-component, non-shrink, precision grout applied in accordance with the recommendations of **a.b.e.® Construction Chemicals**, including curing with **CHRYSO®Cure R** or **CHRYSO®Cure WB**. The grout will have a minimum one-day compressive strength of 13 MPa.

PACKAGING

dura.®grout is supplied in 25 kg polyethylene lined paper bags.

HANDLING AND STORAGE

dura.®grout has a shelf-life of 12 months if kept in a dry store in sealed bags. If stored in high temperature and in high humidity locations the shelf-life may be reduced.

HEALTH AND SAFETY

Product safety information required for safe use is not included. Before handling, read product and safety datasheets and container labels for safe use, physical and health hazard information. The safety datasheet is available from your local **a.b.e.® Construction Chemicals** sales representative.

IMPORTANT NOTE

This datasheet is issued as a guide to the use of the product(s) concerned. Whilst **a.b.e.® Construction Chemicals** endeavors to ensure that any advice, recommendation, specification or information is accurate and correct, the company cannot – because **a.b.e.®** has no direct or continuous control over where and how **a.b.e.®** products are applied – accept any liability either directly or indirectly arising from the use of **a.b.e.®** products, whether or not in accordance with any advice, specification, recommendation, or information given by the company.

FURTHER INFORMATION

Where other products are to be used in conjunction with this material, the relevant technical datasheets should be consulted to determine total requirements. **a.b.e.® Construction Chemicals** has a wealth of technical and practical experience built up over years in the company's pursuit of excellence in building and construction technology.

TYPICAL PHYSICAL PROPERTIES

Setting time @ 20 °C

WATER CONTENT	CONSISTENCY	FLOW CONE	INITIAL SET	FINAL SET
4 L/25 kg	Flowable	50 seconds	1 hour 55 minutes	2 hours 55 minutes
4.5 L/25 kg	Fluid	25 seconds	2 hours 30 minutes	3 hours 55 minutes

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a.b.e.® is an ISO 9001:2015 registered company
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Compressive strength using 100 mm cubes – MPa

WATER CONTENT	1 DAY	3 DAY	7 DAYS	28 DAYS
4 L /25 kg	20	45	55	67
4.5 L /25 kg	13	35	45	60

Tensile strength by splitting 70 mm diameter specimens – MPa

WATER CONTENT	7 DAYS	28 DAYS
4 L /25 kg	5.4	5.9
4.5 L /25 kg	4.5	5.2

Flexural strength on specimens 100 x 100 x 500 mm – MPa

WATER CONTENT	7 DAYS	28 DAYS
4 L /25 kg	8.3	10.7
4.5 L /25 kg	6.7	8.4

Adhesive bond strength on 12.5 mm diameter deformed bars grouted into 50 mm diameter steel pipes with 150 mm embedment.

At seven days, bond strength between rod/grout/pipe exceeded the characteristic yield stress of the steel.

Volume change

Expansion of grout after	
1 hour	0.05%
3 days	0.30%
7 days	0.40%
thereafter	constant

Abrasion resistance by Böhm test

Actual	1.15 mm wear
Permissible	3 mm wear

dura.®grout used as a ram consistency

Mix design	
Powder Mass	25 kg
Water Demand	3 L
Yield	Approximately 12 L

TYPICAL PHYSICAL PROPERTIES	
Wet density	2.327 kg/L
Compressive Strengths	
1 day	44 MPa
3 days	58 MPa
7 days	62 MPa
28 days	> 70 MPa